CLAIMS

1. Platinum, by catalytic action reduces the activation energy of the Air/Fuel mixture causing the rate of combustion to greatly increase.

2 Lower activation energy also reduces the incidents of "missing" in Piston Engines and "flameout" in Gas Turbine Engines. If "flameout" does occur, the lower activation energy of the Air/Fuel mixture in the presence of the catalyst will facilitate relighting.

3. The reactants, the A/F mixture will burn more rapidly, increasing the engine's mean effective pressure and increasing the amount of heat yielded by the fuel. These two effects bring the performance of the Internal Combustion Engines closer to the Air Standard Models.

4. Increasing the engine's mean effective pressure increases the engine's specific power output. (More torque throughout the power band, more trust for jet engines.)

5. Because the engine's specific output increases without an increasing the amount of reactants (A/F mixture) or enriching the A/F mixture the specific fuel consumption will be reduced.

6. Because the Mean Effective Pressure increase more of the heat created by the combustion process will be converted into mechanical work, thus increasing thermal efficiency.

7. Because the combustion will be more rapid a higher percentage of the A/F mixture will burn and the exhaust gasses will be cleaner.

8. In spark ignition engines, because of more complete and rapid combustion this device will allow for greater ignition advance or a higher compression ratio. (Advancing the ignition timing is the better option because it increases the Mean Effective Pressure and the Electronic Control Module can adjust the settings automatically.) This will result in more complete combustion eliminating most flat spots in an Internal Combustion Engine's power band.